It will be remembered that in SCIENCE of February 19, 1897, Professor R. S. Woodward noticed a book of mine entitled 'The Argentaurum Papers No. 1.' The notice was not a review and made no attempt to deal with any of the arguments in the book. It was merely a personal attack upon myself in terms calculated to seriously injure me in the exercise of my profession as a scientific expert. Self-defense was, therefore, necessary; and as I had what I judged to be good reason for supposing that the columns of SCIENCE were closed against any reply on my part, I laid the matter before my legal advisers, and, in accordance with their counsel, I commenced an action for libel against the 'responsible editor' of SCIENCE and Professor Woodward. I fully recognized the inexpediency of such actions as a general rule, and the desirability, in the true interests of philosophy, of permitting absolute freedom of criticism; but I supposed, in this particular case, that an appeal to the law was the only remedy within my reach. I have recently been led to understand that this supposition is erroneous, and that the right to be heard in self-defense was not disputed by the editor of SCIENCE. Under these circumstances I have no intention of proceeding further with the action for libel.

Since writing the foregoing I have received a letter from a very eminent Fellow of the Royal Society informing me that he has performed the crucial experiment suggested in my letter of May 21, 1897, to Sir William Crookes. The gold contained in a Mexican dollar after forty hours of intense cold and continued hammering was found to be 20.9 per cent. more than the quantity of gold contained in the same dollar before the test.

S. H. E.

## SCIENTIFIC LITERATURE.

*Encyclopédie scientifique des aide-mémoire, Les huiles minérales*, Petrole, Schiste, Lignite, par FRANCOIS MIRON. Licencié ès Sciences Physiques Ingénieur Civil. Publiée sous la direction de M. Léauté, Membre de L'Institut. Paris, Gautier-Villars et Fils.

There are no deposits of petroleum in France of commercial value. This fact may furnish a reason why no work upon petroleum of any value has been published in France.

When, a few years since, after a visit to Trinidad, I published a paper on the celebrated Lake, in the *American Journal of Science*, I sent a copy of the paper to M. Alphonse Daubrée and asked him to secure its translation and insertion in some reputable French scientific journal. It was reprinted entire in the *English Geological Magazine* and it was also translated and inserted in one of the scientific journals of Germany. M. Daubrée replied that, while he would like to comply with my request, the French journals printed only original articles. This statement may further explain why the papers of Dr. Hunt, published thirty years ago in French journals, are still quoted by French authors as if they were the only papers extant upon American petroleum. This fact may still further explain why the work before us, which forms a part of an 'Enclyclopédie des Aide-Mémoire,' is neither up to date nor correct to any date. Although the title page is without date, it appears to be just issued; yet the latest date mentioned in association with American petroleum is 1888 and with European petroleum is 1892.

Speaking of the distribution of petroleum, our author says, "In Ohio the deposits of Trumbull, Loraine and Washington were known from time immemorial." These counties are arranged inversely as to their importance, and the Trenton limestone deposits of northwest Ohio—by far the most important of all—are not mentioned at all. He says further, "In Colorado at Cañon City, in Michigan on the shores of Lake Huron, the county of Cumberland in Kentucky and the environs of Santa Clara county in California have yielded and still yield an important production." There is no production at all in Michigan, none of any importance in Cumberland county, Ky., and in California, while petroleum is found in Santa Clara county, the large and important production in that State, is yielded in Los Angeles and Ventura counties, several hundred miles south, between Santa Barbara and Los Angeles.

In his table which shows the geological distribution of petroleum the very important Trenton limestone deposits are not mentioned;

neither are the scarcely less important Tertiary deposits of California, the West Indies and South America. Again he says, "In certain deposits in America, above all, the pressure of the gas upon the oil is feeble; in Russia, on the contrary, it is very strong;" further, "It results that in America the greater part of the wells are exploited with pumps, whilst in Russia they spout of themselves." Proceeding, he illustrates the occurrence of petroleum in the crust of the earth with a diagram, which shows a subterranean chamber containing salt water, petroleum and gas in position, one below the other. Now, these statements as to the gas pressure and pumping wells in the United States are absolutely false, and, while the theory that large cavities in the crust of the earth were filled with gas, oil and water, ranged according to their specific gravities, was broached by Professor E. B. Andrews more than thirty years since, it never found general acceptance, even at that early date, and has been wholly disproved years ago.

Concerning the origin of petroleum, he refers to Hunt's papers, printed nearly forty years ago, and has not a word to say concerning those of Lesley, Orton, Ashburner, Carll, Sadtler, etc.

We look in vain for any adequate statements concerning the nitrogen content of bitumen, particularly petroleum. But little more satisfaction can be found in the meagre notices of the work of Mabery and Smith upon the sulphur compounds of petroleum. And this is the more noticeable, inasmuch, as by referring to these papers at all, the author has shown himself not wholly unacquainted with the subject.

Perhaps one of the most remarkable examples of inadequacy, when due regard is had to the abundance of material from which to draw, is found in the figures and descriptions illustrating the methods and apparatus employed in drilling wells. As reference is made to Boverton Redwood—misspelled Bowerton—it might be inferred that M. Miron was acquainted with the classical work of that author. If he is, we do not understand why such puerile efforts were made, both in matter and quality of designs, to illustrate drilling tools.

But little more satisfaction can be gained from a perusal of the pages devoted to the processes employed in refining petroleum. While the descriptions are correct as far as they go, the illustrations are meagre and wholly unsatisfactory.

At page 127 we reach the consideration of schist oils, an industry which ought to be the pride of every Frenchman. The reader is informed that the origin of this industry dates from 1830, and was founded upon the efforts of the celebrated chemist Laurent, who discovered that, in distilling the schists called bituminous in closed vessels, a liquid was obtained susceptible of giving, after appropriate treatment, refined products like gasoline and the lamp oil of petroleum, as also heavy lubricating oils and paraffine. This statement, while partly true, is most astonishing, as the records of the French Patent Office show that long previous to the publication of Laurent's paper in 1833 —not 1830—several French inventors had been at work on both these products and processes, and that while Laurent earned well-merited distinction in perfecting them the real merit of their invention belongs to several others, but especially to Sèlligue, who obtained his first patent in 1834, but who, according to his own statements, had been already many years at work on the development of his methods.

A lack of time and space prevents a further pursuit of details. To say that the book has no value would be saying too much; to say that the author had used a great opportunity to very little purpose would not be far from the truth. Why an author in any language should refer to Boverton Redwood's work on Petroleum, which is filled with reference to original articles in all languages, and leave out of consideration the papers of Lesley, Orton, Ashburner, Carll, Stevenson, Sadtler, etc., is difficult of explanation.

We would suggest that some French author who reads English should read the several hundred original papers extant on American petroleum, and give to French scientific literature a compendium of information on that interesting subject that would be, at the same time, full, reliable and up-to-date.

S. F. Peckham.